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THE TREATMENT OF STRICTURE OF THE URETHRA.*

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So much has been said and written in recent years in regard to the treatment of stricture of the urethra, that one who has not had an opportunity to make a special study of the subject must often be embarrassed in selecting a plan of treatment adapted to any particular case. And yet nearly every general practitioner has several of these cases come to him each year for treatment. Their frequent appearance in my own consulting-room has compelled me to devote considerable time to the study of the subject. It is my purpose in this paper to present some observations, from the standpoint of the practical surgeon, upon those methods of treatment which have proved of most value in my own practice, and which seem to me likely to give the best results in the hands of the general practitioner.

On account of their comparative rarity, and in order to avoid extending the length of the paper unreasonably, all consideration of traumatic strictures will be omitted, and the discussion will be limited to those gradually forming strictures which are the result of a chronic inflammation of the urethral mucous membrane.

The most constant symptom of stricture is gleet. Con-

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versely, gleet ordinarily depends upon stricture, and usually stricture of large caliber. A man can not have a urethral discharge lasting over six weeks without damaging his urethra. After a gonorrhœa has lasted six weeks the inflammatory process is becoming localized, and a thickening of the peri-urethral tissue is almost inevitable. At the same time I do not consider that every man who presents himself for treatment with chronic urethritis and a moderate coarctation of the urethra has an organic stricture. It may be merely a thickening which, if allowed to go on, will develop into an organic stricture.

Another very constant symptom of stricture, and one which is generally present in the forming stage, is the dribbling of urine after the act of micturition is apparently completed. This is due to a loss of the normal elasticity of the urethra at the point where the deposition of plastic material is taking place, and the inability of the compressor urethræ muscle to overcome the abnormal resistance. A portion of the urine is consequently retained behind the coarctation, and subsequently escapes drop by drop.

Only old strictures, as a rule, cause symptoms in the absence of a gleety discharge. Such strictures may cause a variety of symptoms. Frequent micturition, if present during the day, should lead the surgeon to suspect stricture. He should also inquire if the stream is small, forked or twisted, if the urine falls drop by drop, if there has been retention, and finally if the patient has had gonorrhœa. These cases are generally strictures of small caliber, which may easily be detected.

I have known an old tight stricture, of ten or fifteen years' duration, to have been treated, as chronic inflammation of the bladder, with buchu, alkalies, and suppositories, by a physician of the highest reputation. When a patient has chronic cystitis, it is always well to consider

what causes it. Inquire in regard to urinary symptoms, and examine with a suitable instrument. It may be arrested in the deep urethra. Such cases are not uncommon.

In strictures of large caliber it is a nice point to tell where coarctation is taking place. It is impossible to do this with a steel sound, as most men try to do. This is why so many men fail to find a stricture; why, consequently, so many strictures go untreated; and why, furthermore, it is so common for a man who presents himself for treatment with a gleet to exclaim, after a stricture is detected, "Why, Dr. So-and-so told me a couple of weeks ago that I had no stricture."

In order to detect a stricture of large caliber, it is necessary to use either a urethrometer or a set of metallic or flexible bulbous bougies. I prefer the bougies. My own experience, moreover, has been that a moderate degree of coarctation is more readily detected by the flexible instruments than by the olive-headed bougies of Otis. Of course it is not difficult to detect a stricture of small caliber with any instrument. It is, however, difficult for a man who has not used both to realize what a difference it makes whether one uses a steel sound or a bulbous bougie for the detection of a stricture of large caliber. Repeatedly men have come to me with chronic gonorrhœa or gleet, and have told me that they had been examined by a surgeon, and assured that they had no stricture. I have then tried a flexible bulbous bougie, and seen it arrested in less than two inches from the meatus. Then I have tried a solid blunt steel instrument, and passed it right through the stricture without the least resistance. But it is these very strictures of large caliber which it is important to detect and cure before they become organized.

When a patient comes to you in whose urethra you suspect the existence of a stricture, you first measure the cir-

cumference of the penis; then, bearing in mind the ratio which this bears to the caliber of the normal urethra, you select a bougie of such a size as the measurement shows that the meatus ought to admit. Having well oiled the instrument, putting the penis gently on the stretch, you carefully pass the bougie along the urethra. If it enters the bladder without encountering any resistance, there is no stricture. If a stricture exists, the bougie will be arrested. Then take a smaller instrument and repeat the manœuvre and so continue until you find one which will pass the point of obstruction. This shows the caliber of the stricture. Then, recognizing the well-known fact that where there are several strictures the nearer the meatus the larger the caliber of the stricture, the examination is continued in the search for other strictures, a smaller and smaller instrument being used in order to detect narrowings nearer and nearer the bladder.

Having determined the existence and location of one or more strictures, do no more at this sitting. Warn the patient that the next act of micturition will probably be attended with some pain. Then, having given him such directions in regard to his hygiene and having prescribed such constitutional treatment as his individual case requires, direct him to return in three or four days for further treatment.

Every case of stricture should be treated as a whole. The physical condition of the patient should be studied. Most of these patients are run down and in an anæmic condition, due partly to the local irritation and suppuration, and partly to mental worry. Such patients need iron and general tonics.

Like every other inflamed organ, the urethra which is the seat of stricture should be placed at rest as far as possible; all sources of irritation should be removed. The

urine should be rendered as unirritating as possible. All articles of food which have a tendency to cause crystals of uric acid to be present in the urine should be avoided. The diet should, therefore, be mild and unstimulating, and the amount of nitrogenous food ingested should, as a rule, be limited. The use of all kinds of alcoholic stimulants, including beer and ale, should generally be stopped. Coffee also should be omitted. Smoking, in my experience, has proved as injurious in some cases as alcohol, and should be forbidden.

In strictures of large caliber, with gleet, it is necessary to neutralize the urine with alkalies. The fluid extract of kava-kava I have used a great deal of late, and in cases attended with a gleety discharge it has proved beneficial. There is a great difference in urethræ, some being very irritable. Bromide of potassium will do a great deal for these cases. Given in full doses for a few days, it blunts the sensibility of the urethra. A combination of bicarbonate of potassium, kava-kava, and hyoscyamus is often very effective by rendering the urine alkaline, by lessening urethral irritability, and by diminishing the gleety discharge.

Finally, the patient should be warned to be as pure in word, thought, and action as possible. If a single man, he should abstain absolutely from sexual intercourse. The society of lewd women and lascivious thoughts and conversation should always be avoided. In this way nervous and vascular activity about the genital organs may be greatly diminished.

When the patient returns, if his meatus is not up to the required standard, it must be enlarged. It should be a golden rule in surgery that all strictures of the meatus must be cut, for you can not stretch them. This may be done in several ways, some men preferring a bistoury, some scissors, and others a urethrotome constructed especially for the

purpose, the best one, perhaps, being that of Civiale. My own practice is to use the latter. The incision should always be made downward in the floor of the urethra. In performing this operation great care should be used to make the opening sufficiently large to admit a bulbous bougie of a size a little larger than that which our measurement of the penis has shown that the urethra should admit, in order to make allowance for the contraction which takes place in healing; but the operator should also be cautious not to make the incision unnecessarily large, lest he create an artificial hypospadias. If too large an opening is made, it subjects the patient to the exceeding inconvenience of not being able to pass his water in a compact stream. In some instances, where a perhaps too enthusiastic follower of the teachings of Dr. Otis has, in the excess of his zeal, carried the incision beyond the bounds of nature and of reason, the sufferer has been obliged to sit down upon a vessel or a water-closet to urinate. In one or two cases which have come to my knowledge such patients have applied to the surgeon with a view of having a plastic operation undertaken for the relief of the deformity resulting from this barbarous mutilation.

The hæmorrhage following this operation is sometimes quite abundant, but ordinarily stops spontaneously in a few minutes. If, however, it does not do so, it can generally be arrested by wrapping a little cotton around a probe and applying some tincture of iodine to the cut surfaces. The hæmorrhage having ceased, a piece of lint should be inserted within the meatus and allowed to remain until carried away by the stream of urine. This serves the double purpose of preventing union of the cut surfaces, and also tends to prevent recurrence of the hæmorrhage.

There are several ways in which the patulous condition of the meatus may be maintained. You may pass in every

day a full-sized bulbous bougie, or a conical steel sound, or a so-called fossal sound, made especially for this purpose. I am in the habit of employing the latter. Experience has shown me that, if an instrument is not passed in every day, granulations grow so rapidly in this situation that in two days it will be impossible to pass it without subjecting the patient to a great deal of pain—much more than where it is passed every day. It is not generally necessary to confine the patient to the bed or to the house after this operation. He should bathe the parts twice a day in hot water, and should not walk much for a day or two. In this way it is possible to obviate a tendency to inflammation at the site of the operation, and also in the adjacent parts, as the lymphatic glands. Should the wound in healing show a disposition to become a little sloughy, it is well to dust over the surface a little iodoform or bismuth.

When the wound of the meatus has healed, which usually occurs in about two weeks, the gleety discharge, for which the patient sought treatment, very often has stopped. If it has not, we again explore the deeper portion of the urethra, using as before the flexible bulbous bougies.

Many strictures are reflex in character, and entirely disappear when the meatus has been enlarged. The necessity of relieving a contracted meatus before attending to a stricture of small caliber in the deep urethra is illustrated by the following case:

The patient had gleet, and, five inches from the meatus, a so-called impassable stricture, through which a filiform bougie could not be passed. He had also a stricture of large caliber in the pendulous urethra, and a small meatus. He could only pass a little water, drop by drop, and I feared retention. I at first attempted to pass a filiform instrument through the stricture, but failed, although a No. 14 American could be easily passed down to it. Each time I saw

him I persisted in the attempt as long as I dared, fearing lest inflammatory swelling in the urethra should be excited. In the mean while he was kept in bed and received appropriate constitutional treatment. Having made a thorough trial of this plan of treatment, and being unable to reach the bladder, I threw aside the filiform instruments, ignored for the time being the deep stricture, and gave him a meatus which would admit a No. 21 sound. When the meatus had healed, a full-sized conical steel sound was passed down to the face of the stricture, and gentle and continuous pressure was made. This was repeated once in four days. At the third trial the instrument passed immediately into the bladder.

After the meatus has been sufficiently enlarged, should other strictures exist, the question of treatment at once involves a determination of the comparative merits of gradual dilatation and internal urethrotomy. My own preference is for gradual dilatation, which I carry out in the following way: Having determined the caliber of the stricture, a sound, of such a size as the bulbous bougie has shown that it will admit, is introduced. If this passes easily, the next size larger may, if possible, be gently passed through the stricture. Inasmuch as strictures are rarely encountered beyond the triangular ligament, it is not necessary to pass a sound beyond this point. By avoiding this we not only do away with the most distressing part of sounding, but also lessen in no small degree the danger of exciting epididymitis, prostatitis, and cystitis. Some surgeons advise that the instrument should be left in the urethra for five minutes or even longer. My own conviction is that when the instrument has passed the strictured point it has accomplished all that it can do. I consequently withdraw it at once, believing, as I do, that any instrument in the urethra produces irritation, and that, the longer it is allowed to remain there,

the greater is the irritation produced. By the simple pressure in passing an instrument through the stricture all the good possible from this plan of treatment is effected. The way in which the use of a sound benefits a stricture dependent upon the organization of plastic material is in no way analogous—as many seem to suppose that it is—to the action of over-distension in relaxing muscular spasm. In view of both of these considerations, straight steel sounds are both useful and convenient. In treating strictures of the urethra it is a good rule never to employ a steel instrument of smaller size than a No. 9 American, on account of the great danger of making a false passage. Furthermore, whenever, in introducing instruments into the urethra, blood is drawn, it is time to stop.

In regard to the frequency with which sounds should be introduced into the urethra for the cure of stricture there is a considerable diversity of practice among surgeons. The older the stricture, the more firmly organized has become the plastic material, and, in consequence, it requires less frequent introduction of instruments. These cases of stricture, which we will designate as strictures of small caliber—using that term to designate strictures which will not admit a No. 9 bougie—will improve faster by *not* introducing an instrument more often than once in six, seven, or even eight days. The exact interval appropriate for each individual case can only be learned by observing the effect upon that case of introductions at different intervals. As a rule, it is poor surgery to introduce an instrument into an old, firmly organized stricture more frequently than has been indicated. If a sound is introduced every day or two, it causes inflammation or swelling, and you can not tell how the dilatation is progressing. In treating strictures of large caliber, which, as a rule, are not so firmly organized, and in which, as a consequence, there is not so

much vascular reaction, the introduction may be repeated once in four days. Practitioners do not, it seems to me, appreciate the value of gradual dilatation because they do not observe carefully enough the effect of a single introduction of a sound.

At the next visit of the patient, the largest instrument which passed through the stricture easily is again passed. Then the next size larger is tried. If this is grasped, or tightly held on withdrawal, no more is to be done at this time. Should it pass easily, we again try a still larger one. Usually it will not be possible to use an instrument more than one size larger than that previously used. At each succeeding visit the same plan is followed of first introducing that instrument which was introduced last at the previous visit. The size of the instrument is thus gradually increased until the full caliber of the urethra has been reached. When this has been attained it is necessary to continue to pass the full-sized instrument at such gradually increasing intervals as experience shows are not so long as to permit so much contraction, at the point where the stricture existed, as to render the introduction of the instrument at all difficult.

The plan of treatment thus outlined has, in my experience, proved uniformly successful. In none of the cases which have fallen under my observation have I had occasion to have recourse to internal urethrotomy, perineal section, or electrolysis. Divulsion I have used only in some half-dozen cases of traumatic stricture, the consideration of which has been purposely excluded from the discussion. I will now state briefly why I do not use one of the other methods rather than gradual dilatation.

Perineal section is undoubtedly indicated in some cases of impassable stricture, particularly when complicated by sinuses. But I have been so fortunate, up to the present

time, as not to meet with any case in which I have not been able, by the exercise often of considerable patience, to finally pass the stricture, and eventually to remove the obstruction and see the sinuses close up.

Electrolysis requires for its performance a variety of expensive apparatus which easily gets out of order, and is hardly practicable except in the hands of an expert in electrical treatment. In the short time since its introduction to the attention of the profession it has not been sufficiently simplified to be available for the general practitioner. Any cases, therefore, in which it may seem to be indicated should, for the present, be sent to the electrologist.

In regard to internal urethrotomy, which has a few earnest advocates, I have but little to say. In operations upon the urethra, the best results, as regards freedom from disagreeable and even dangerous complications, will be obtained by him who uses the minimum of violence. Furthermore, it is a rule of practice with me, in the treatment of any surgical lesion, to always select a method of treatment which, while its final result is satisfactory, is at the same time absolutely free from danger, in preference to one which is unquestionably attended by no inconsiderable risk. Gradual dilatation, in almost every case, gives favorable results, and may be carried on with perfect safety and without interfering with the ordinary business of the patient. Internal urethrotomy, on the contrary, always necessitates the confinement of the patient to his bed for several days. It is not infrequently followed by hæmorrhage, suppression of urine, septicæmia, extravasation of urine, and perineal abscess. Nor can the fact be overlooked that instances of death following the operation are occasionally reported, and, considering the tendency among medical men to report favorable cases and to say nothing of unfavorable ones, it is but fair to presume that the actual

mortality is much greater than is generally supposed. Moreover, the operation does not effect a complete cure, but the passage of a sound at regular intervals is just as necessary as after treatment by gradual dilatation. Now and then an old, very resilient stricture is met with which is made worse by attempts at dilatation, or one in which bladder symptoms are so urgent, in consequence of long-continued obstruction, that prompt relief is necessary. Urethral fever sometimes follows attempts at gradual dilatation in cases of this kind, which, however, are more apt to be seen in metropolitan hospitals and dispensaries than in private practice. Internal urethrotomy should, therefore, be reserved as a last resort for cases in which other, less dangerous, methods of treatment, after repeated trials, have failed, or in which immediate relief is imperatively demanded. I am thoroughly convinced that such cases are exceedingly rare.

Finally, I wish to emphasize a few points which I consider of especial importance:

First. Constitutional treatment should be employed in every case.

Second. If the meatus is small, enlarge it.

Third. Do not use the sound too frequently.

Fourth. Do not keep it in the urethra too long.

Fifth. Do not introduce it too far.

Sixth. Internal urethrotomy is occasionally, though rarely, necessary.

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